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Document starts on next page

## UPDATE

Attached are revised pages to replace the endnotes of Advisory Circular No. 17F. Please discard pages 16 and 17 of the endnotes issued November 16, 1982 and insert the revised pages dated January 21, 1988. Explanation of the revisions is provided in manufacturer guidance letter CD-88-02, dated January 21, 1988.

## XI. General Criteria for Carryover of Fuel Economy Data from Vehicles Other Than Those for Which Certification Carryover is Requested

- A. A request for carryover of fuel economy data from vehicles other than those for which certification carryover is requested must be submitted with an FEDV package indicating that the data are from a prior model year.
- B. Vehicles other than those for which certification carryover is requested must satisfy the criteria set forth in Section V of this A/C to be considered for fuel economy carryover.
- C. Since the vehicles which generated these data have previously satisfied the vehicle acceptability and data reasonableness criteria, the data need only satisfy the representativeness criteria (paragraph X.D of this A/C).
- D. Data which satisfy all of the criteria will be included in the fuel economy data base in accordance with the provisions of 40 CFR 600.008-77(b).
- E. Any vehicle which does not satisfy the certification carryover criteria and/or data which do not satisfy the representativeness criteria will cause the carryover request to be denied.

Office of Mobile Sources

Attachment



## ENDNOTES TO ADVISORY CIRCULAR NO. 17F

- "Qualified to be grouped in the same engine family" means that the current year vehicle and the vehicle which generated the proposed carryover data must be identical in all the aspects listed in A/C No. 20B, Sections D, E, F (four-stroke, two-stroke, or rotary engines respectively).
- 2. "Qualified to be grouped in the same evaporative emission family" means that the current year vehicle and the vehicle which generated the proposed carryover data must be identical in all the aspects listed in A/C No. 59, Section D.
- 3. The same basic evaporative emission control system as specified in A/C No, 59, Section E.
- 4. It is the manufacturer's responsibility to assure that an increase in catalyst temperature will not result in increased thermal degradation of the catalyst. If the manufacturer has any reason to suspect that thermal degradation of the catalyst will increase significantly, carryover may not be approved. EPA believes that thermal degradation of the catalyst is not likely to increase if catalyst temperatures do not increase. EPA intends to look more closely at those cases where catalyst temperatures increase significantly. Criteria are offered below as a guideline to determine if catalyst temperatures are significantly affected. These criteria allow small increases in time and temperature to account for measurement variability. A manufacturer may determine that other criteria are more appropriate for establishing the acceptability of carryover for its designs. The manufacturer should document the basis for its determination that thermal degradation of the catalyst will not increase significantly. If a manufacturer believes that the following guideline is not appropriate for a particular situation and can document that thermal degradation of the catalyst will not increase even though these criteria are not met, durability carryover may still be approved. However, when the following criteria are not met, the manufacturer should notify EPA in writing at the time the carryover decision is made. This will allow most timely EPA audit of the manufacturer's carryover decision. The amount of time spent in the following temperature intervals is not increased by more than 3 percent or 60 seconds, whichever is greater, during the mileage accumulation cycle (approximately 2 hour cycle) unless there is a corresponding decrease in time at a higher temperature interval. The temperature intervals higher temperature interval. The temperature intervals are 601°C to 650°C, 651°C to 700°C, 701°C to 750°C, and 751°C to 800°C (other intervals within this

Revised: 1-21-88



range may be appropriate, the 60 second tolerance applies to a 50°C interval). If maximum temperatures are above 800°C, the maximum temperature is not increased by more than 2 percent and amount of time above 800°C is not increased by more than 2 percent or 30 seconds, whichever is greater. If the catalyst uses Al<sub>2</sub>O<sub>3</sub> for support but does not contain Ni, only increases in time at temperatures above 700°C need to be considered. For oxidation catalysts which use Al<sub>2</sub>O<sub>3</sub> for support but do not use Ni and do not use Rh, only increases in time at temperatures above 750°C need to be considered.

Whenever possible, the impact of a change on catalyst temperatures should be evaluated on a single vehicle, preferably the original durability-data vehicle. If the original durability-data vehicle is not available, the highest selling configuration from either of the model years is preferred. If it is not practical to evaluate the change on a single vehicle, other vehicle differences which could affect catalyst temperatures should be minimized. Again, configurations representing highest sales from each model year should be used if practical.

Thermocouples should be located to provide accurate measurement of maximum temperatures. Each manufacturer should obtain a description of such location from his catalyst supplier and retain this with the rest of the documentation. If this is not possible, for monolith catalysts, thermocouples may be located within the catalyst substrate at the approximate radial center of the exhaust stream and approximately one inch downstream from the front face of the substrate. If the catalyst is composed of multiple containers or multiple substrate biscuits in the same container, more than one thermocouple is required. Locate one thermocouple within each substrate biscuit as described above. Thermocouples should not be located in the exhaust pipe, in free exhaust air, or directly in the delivery path of secondary air injection systems.

5. Carryover may not be approved for any components or systems that were used in families certified without completing the 50,000-mile certification proveout under the small-volume provisions of 40 CFR 86.082-24(e). Hanufacturers must continue to submit requests to EPA for carryover involving systems or components that have not completed the 50,000-mile certification proveout. Requests for carryover may also be submitted to EPA if the 50,000-mile certification proveout has been successfully completed but a certificate was never obtained.

Revised: 1-21-88

